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12 January 2017

Don Goodrich
U.S. EPA, Region 8
1595 Wynkoop St
Denver, CO 80202

RE: Bonita Peak DV ESAT A-119
TDD 0004/1612-03

Dear Mr. Goodrich:

Please find attached the data validation report for Sample Delivery Groups C161101 and C161105 for the Bonita Peak site. This report has been prepared by START chemists in accordance with TDD 1612-03.

If you have any questions or require additional information, please contact me by phone at 303-729-6124 or by email at natalie.quiet@westonsolutions.com.

Very truly yours,

WESTON SOLUTIONS, INC.

Natalie Quiet
Project Manager

Enclosures: Data Validation Report

DCN: W0433.4B.01224

DATA VALIDATION REPORT

Bonita Peak DV ESAT A-119

SAMPLE DELIVERY GROUP: C161101

Prepared by

MEC^X
12269 East Vassar Drive
Aurora, CO 80014

I. INTRODUCTION

Task Order Title:	Bonita Peak DV ESAT A-119
Contract Task Order:	20408.012.004.0433.00
Sample Delivery Group:	C161101
Weston Project Manager:	Natalie Quiet
EPA Project Manager:	Don Goodrich
TDD No.:	0004/1612-03
Case No.:	ESAT TDF A-119
Matrix:	Water
QC Level:	Stage 2B
No. of Samples:	3
No. of Reanalyses/Dilutions:	0
Laboratory:	ESAT

Table 1. Sample Identification

Location ID	*Sample No.*	*Lab Sample Name*	*Matrix Type*	*Collection Date*	*Method*
CC29B	A83-2643	C161101-01	Water	10/20/2016 1:00:00 PM	200.7, 200.8
CC29B	A83-2643	C161101-02	Water	10/20/2016 1:00:00 PM	200.7, 200.8, 2340B
CC29B	A83-2643	C161101-03	Water	10/20/2016 1:00:00 PM	300.0, 310.1

It should be noted that the reviewer used laboratory sample names to identify specific sample fractions in this report.

II. Sample Management

The samples were received within the temperature limits of >0°C to <6°C. According to the Sample Receipt Form (SRF) the samples were received intact and properly preserved. The chains of custody (COC) were signed and dated by field and/or laboratory personnel. The samples were logged in the by laboratory with unique laboratory ID for the total and dissolved metals, and wet chemistry analyses. Custody seals were absent; the SRF indicated that the samples were “dropped off.”

Data Qualifier Reference Table

Qualifier	Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit. The associated value is the quantitation limit or the estimated detection limit for dioxins or PCB congeners.	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit. The associated value is the sample detection limit or the quantitation limit for perchlorate only.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
J+	Not applicable	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample, and may have a potential positive bias.
J-	Not applicable	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample, and may have a potential negative bias.
UJ	The analyte was not deemed above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."	Not applicable.

Qualifier	Organics	Inorganics
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	Not applicable.
R	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.

Qualification Code Reference Table

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
C	Calibration %RSD or %D was noncompliant.	Correlation coefficient is <0.995 or calibration was noncompliant.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
B	Presumed contamination as indicated by the preparation (method) blank results.	Presumed contamination as indicated by the preparation (method) or calibration blank results.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
L1	LCS/LCSD RPD was outside control limits.	LCS/LCSD RPD was outside control limits.
Q	MS/MSD recovery was poor.	MS recovery was poor.
Q1	MS/MSD RPD was outside control limits.	MS/MSD RPD was outside control limits.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	ICPMS tune was not compliant.
T	Presumed contamination as indicated by the trip blank results.	Not applicable.
+	False positive – reported compound was not present.	Not applicable.
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination as indicated by the FB or ER results.	Presumed contamination as indicated by the FB or ER results.
F1	Field duplicate results were outside the control limit.	Field duplicate results were outside the control limit.
$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.

Qualifier	Organics	Inorganics
D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
*II, *III	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.

III. Method Analyses

A. Methods 200.7, 200.8, and 2340B—Metals and Hardness

Reviewed By: M. Hilchey
Date Reviewed: January 6, 2017

The samples listed in Table 1 for these analyses were validated based on the guidelines outlined in the *Quality Assurance Project Plan for U. S. EPA Region 8 CERCLA Site Assessment* (Rev. 2015); *United States Environmental Protection Agency Method 200.7, 200.8 and 2340B;* and the *National Functional Guidelines for Inorganic Superfund Data Review* (2014).

- Holding Times: The analytical holding time, six months for metals, was met.
- Instrument tune: All ICPMS tuning requirements were met.
- Calibration: The initial calibration summaries indicated that the method calibration criteria were met. Initial (ICV) and continuing calibration (CCV) frequency requirements were met. ICV and CCV recoveries were within 90-110%. The reporting limit check standards met laboratory recovery limits.
- Method Blanks: No target analytes were reported in the method blanks or calibration blanks.
- Interference Check Samples (ICSA/B): ICSA/B results are not evaluated at a Stage 2B validation.
- Laboratory Control Samples (LCS): The LCS recoveries were within the laboratory control limits for all target analytes.
- Laboratory Duplicates: Laboratory duplicate analyses were performed on samples C161101-01 and C161101-02 for Methods 200.7 and 200.8. All RPDs met the laboratory control limit of ≤20% for sample results <5x RL.
- Matrix Spike: Matrix spike analyses were performed on samples C161101-01 and C161101-02 for Methods 200.7 and 200.8. Recoveries were not assessed when the parent sample concentrations were more than 4× the spike amount. Recoveries for all target analytes met laboratory control limits of 70-130%.
- Post Digestion Spike: Post digestion spike analyses were not reported.
- Serial Dilution: Serial dilution analysis was performed on samples C161101-01 and C161101-02 for Methods 200.7 and 200.8. Results were not assessed unless the parent sample concentration was >50× the MDL. The control limit of ≤10% difference (%D) of the original sample results was met for all applicable target analytes.
- Internal Standards: All site sample ICPMS internal standard (IS) intensities were within 60-125% of the response in the calibration blank for reported target analytes.
- Sample Result Verification: Analyte quantification was not verified at a Stage 2B validation. Detects below the reporting limit were qualified as estimated (J). Nondetects are valid to the RL.

All samples were diluted 5x for total ICPMS analysis. Detected results for dilutions were flagged with "D" by the laboratory. Reporting limits were adjusted accordingly.

- Field QC Samples: MEC^X evaluated field QC samples, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. MEC^X used the remaining detects to evaluate the associated site samples. Findings associated with field QC samples are summarized below.
  - Field Blanks and Equipment Blanks: No samples were identified as field or equipment blanks in this SDG.
  - Field Duplicates: No samples were identified as field duplicates in this SDG.

B. METHODS 300.0 and 310.0-Anions and Total Alkalinity

Reviewed By: M. Hilchey
Date Reviewed: January 6, 2017

The sample listed in Table 1 for these analyses was validated based on the guidelines outlined in the *Quality Assurance Project Plan for U. S. EPA Region 8 CERCLA Site Assessment* (Rev. 2015); *United States Environmental Protection Agency Methods 300.0 and 310.1; and* the *National Functional Guidelines for Inorganic Superfund Data Review* (2014).

- Holding Times: The analytical holding times, as listed below, were met.
  - Anions (300.0) – 28 days
  - Total Alkalinity (310.1) – 14 days
- Calibration: The initial calibration summaries indicated that the method calibration criteria were met. Initial (ICV) and continuing calibration (CCV) frequency requirements were met. ICV and CCV recoveries were within 90-110%.
- Blanks: No target analytes were reported in the method blanks or calibration blanks.
- Laboratory Control Samples (LCS): The LCS recoveries were within the laboratory control limits for all target analytes.
- Laboratory Duplicates: Laboratory duplicate analyses were performed on sample C161101-03 for both methods. All RPDs met the laboratory control limit of ≤20% for sample results <5x RL.
- Matrix Spike/Matrix Spike Duplicate: Matrix spike analysis was performed on sample C161101-03 for Method 300.0, anions. Recoveries for all target analytes met laboratory control limits.
- Sample Result Verification: Analyte quantification was not verified at a Stage 2B validation. Nondetects are valid to the RL.

  The sample was diluted for fluoride and sulfate analysis. Detected results for dilutions were flagged with "D" by the laboratory. Reporting limits were appropriately adjusted.

- Field QC Samples: MEC^X evaluated field QC samples, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. MEC^X used the remaining detects to evaluate the associated site sample. Findings associated with field QC samples are summarized below.
    - Field Blanks and Equipment Rinsates: No samples were identified as field or equipment blanks in this SDG.
    - Field Duplicates: No samples were identified as field duplicates in this SDG.

Validated Sample Result Forms C161101

Analysis Method DM-Hardness - Calculated

Lab Sample Name: C161101-02 **Sample No:** A83-2643 **Sample Date:** 10/20/2016 1:00:00 PM

Location CC29B **Matrix Type:** Water

Analyte	CAS No	Result Value	Sample Adjusted CRQL	Sample Adjusted MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Hardness	NA	584	2	2	mg/L			

Analysis Method ICPMS Diss. Metals

Lab Sample Name: C161101-02 **Sample No:** A83-2643 **Sample Date:** 10/20/2016 1:00:00 PM

Location CC29B **Matrix Type:** Water

Analyte	CAS No	Result Value	Sample Adjusted CRQL	Sample Adjusted MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Antimony	7440-36-0	<5.00	5.00	2.50	ug/L	U	U	
Arsenic	7440-38-2	4.19	10.0	2.50	ug/L	JD	J	
Cadmium	7440-43-9	1.35	1.00	0.500	ug/L	D		
Chromium	7440-47-3	<10.0	10.0	5.00	ug/L	U	U	
Copper	7440-50-8	26.4	5.00	2.50	ug/L	D		
Lead	7439-92-1	<1.00	1.00	0.500	ug/L	U	U	
Nickel	7440-02-0	14.2	5.00	2.50	ug/L	D		
Selenium	7782-49-2	<10.0	10.0	5.00	ug/L	U	U	
Silver	7440-22-4	<5.00	5.00	2.50	ug/L	U	U	
Thallium	7440-28-0	<10.0	10.0	5.00	ug/L	U	U	

Analysis Method ICPMS Tot. Rec. Metals

Lab Sample Name: C161101-01 **Sample No:** A83-2643 **Sample Date:** 10/20/2016 1:00:00 PM

Location CC29B **Matrix Type:** Water

Analyte	CAS No	Result Value	Sample Adjusted CRQL	Sample Adjusted MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Antimony	7440-36-0	<5.00	5.00	2.50	ug/L	U	U	
Arsenic	7440-38-2	5.92	10.0	2.50	ug/L	JD	J	
Cadmium	7440-43-9	1.32	1.00	0.500	ug/L	D		
Chromium	7440-47-3	<10.0	10.0	5.00	ug/L	U	U	
Copper	7440-50-8	27.3	5.00	2.50	ug/L	D		
Lead	7439-92-1	<1.00	1.00	0.500	ug/L	U	U	
Nickel	7440-02-0	9.13	5.00	2.50	ug/L	D		
Selenium	7782-49-2	<10.0	10.0	5.00	ug/L	U	U	
Silver	7440-22-4	<5.00	5.00	2.50	ug/L	U	U	
Thallium	7440-28-0	<10.0	10.0	5.00	ug/L	U	U	

Analysis Method ICPOE Diss. Metals

Lab Sample Name: C161101-02 **Sample No:** A83-2643 **Sample Date:** 10/20/2016 1:00:00 PM

Location CC29B **Matrix Type:** Water

Analyte	CAS No	Result Value	Sample Adjusted CRQL	Sample Adjusted MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Aluminum	7429-90-5	2060	50.0	20.0	ug/L			
Beryllium	7440-41-7	<5.00	5.00	2.00	ug/L	U	U	
Calcium	7440-70-2	208000	250	100	ug/L			
Iron	7439-89-6	32400	250	100	ug/L			
Magnesium	7439-95-4	15600	250	100	ug/L			
Manganese	7439-96-5	4210	5.00	2.00	ug/L			
Silica (SiO2)	763-18-69	46500	1000	250	ug/L			
Strontium	7440-24-6	1330	10.0	2.00	ug/L			
Zinc	7440-66-6	954	20.0	10.0	ug/L			

Analysis Method ICPOE Tot. Rec. Metals

Lab Sample Name: C161101-01 **Sample No:** A83-2643 **Sample Date:** 10/20/2016 1:00:00 PM

Location CC29B **Matrix Type:** Water

Analyte	CAS No	Result Value	Sample Adjusted CRQL	Sample Adjusted MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Aluminum	7429-90-5	2080	50.0	20.0	ug/L			
Beryllium	7440-41-7	<5.00	5.00	2.00	ug/L	U	U	
Calcium	7440-70-2	208000	250	100	ug/L			
Iron	7439-89-6	34900	250	100	ug/L			
Magnesium	7439-95-4	15700	250	100	ug/L			
Manganese	7439-96-5	4220	5.00	2.00	ug/L			
Silica (SiO2)	763-18-69	46600	1000	250	ug/L			
Strontium	7440-24-6	1380	10.0	2.00	ug/L			
Zinc	7440-66-6	920	20.0	10.0	ug/L			

Analysis Method WC - Alkalinity

Lab Sample Name: C161101-03 **Sample No:** A83-2643 **Sample Date:** 10/20/2016 1:00:00 PM

Location CC29B **Matrix Type:** Water

Analyte	CAS No	Result Value	Sample Adjusted CRQL	Sample Adjusted MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Total Alkalinity	NA	<10.0	10.0	5.00	mg CaC	U	U	

Analysis Method WC - Anions by Ion Chroma

Lab Sample Name: C161101-03 **Sample No:** A83-2643 **Sample Date:** 10/20/2016 1:00:00 PM

Location CC29B **Matrix Type:** Water

Analyte	CAS No	Result Value	Sample Adjusted CRQL	Sample Adjusted MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Chloride	16887-00-6	<3.2	3.2	1.6	mg/L	U	U	
Fluoride	16984-48-8	1.6	0.8	0.4	mg/L	D		
Nitrate/Nitrite as N	NA	<0.8	0.8	0.4	mg/L	U	U	

Analysis Method *WC - Anions by Ion Chroma*

Sulfate as SO4	148-08-798	688	8.0	4.0	mg/L	D

DATA VALIDATION REPORT

Bonita Peak DV ESAT A-119

SAMPLE DELIVERY GROUP: C161105

Prepared by

MEC^X
12269 East Vassar Drive
Aurora, CO 80014

I. INTRODUCTION

Task Order Title:	Bonita Peak DV ESAT A-119
Contract Task Order:	20408.012.004.0433.00
Sample Delivery Group:	C161105
Weston Project Manager:	Natalie Quiet
EPA Project Manager:	Don Goodrich
TDD No.:	0004/1612-03
Case No.:	ESAT TDF A-119
Matrix:	Solid
QC Level:	Stage 2B
No. of Samples:	21
No. of Reanalyses/Dilutions:	0
Laboratory:	ESAT

Table 1. Sample Identification

Location ID	*Sample No.*	*Lab Sample Name*	*Matrix Type*	*Collection Date*	*Method*
A34	A8M5-2643	C161105-01	Solid	9/27/2016 10:00:00 AM	200.7, 200.8, 7473
A41A	A8M5-2644	C161105-02	Solid	9/29/2016 8:30:00 AM	200.7, 200.8, 7473
A68	A8M5-2645	C161105-03	Solid	9/27/2016 10:25:00 AM	200.7, 200.8, 7473
CC18B	A8M5-2646	C161105-04	Solid	9/29/2016 2:15:00 PM	200.7, 200.8, 7473
CC21D	A8M5-2647	C161105-05	Solid	9/28/2016 5:10:00 PM	200.7, 200.8, 7473
CC24C	A8M5-2648	C161105-06	Solid	9/29/2016 12:00:00 PM	200.7, 200.8, 7473
CC25	A8M5-2649	C161105-07	Solid	9/29/2016 9:15:00 AM	200.7, 200.8, 7473
CC26	A8M5-2650	C161105-08	Solid	9/28/2016 4:20:00 PM	200.7, 200.8, 7473
CC38	A8M5-2651	C161105-09	Solid	9/28/2016 8:48:00 AM	200.7, 200.8, 7473
CC38D	A8M5-2652	C161105-10	Solid	9/28/2016 10:40:00 AM	200.7, 200.8, 7473
EG2	A8M5-2653	C161105-11	Solid	9/29/2016 4:00:00 PM	200.7, 200.8, 7473
EG2A	A8M5-2654	C161105-12	Solid	9/29/2016 3:30:00 PM	200.7, 200.8, 7473
EG3A	A8M5-2655	C161105-13	Solid	9/29/2016 1:00:00 PM	200.7, 200.8, 7473
EG5	A8M5-2656	C161105-14	Solid	9/28/2016 4:15:00 PM	200.7, 200.8, 7473
M12	A8M5-2657	C161105-15	Solid	9/29/2016 4:35:00 PM	200.7, 200.8, 7473
M14	A8M5-2658	C161105-16	Solid	9/28/2016 4:30:00 PM	200.7, 200.8, 7473
M24D	A8M5-2659	C161105-17	Solid	9/27/2016 5:30:00 PM	200.7, 200.8, 7473
M25	A8M5-2660	C161105-18	Solid	9/27/2016 5:00:00 PM	200.7, 200.8, 7473
M26B	A8M5-2661	C161105-19	Solid	9/28/2016 9:35:00 AM	200.7, 200.8, 7473
M27	A8M5-2662	C161105-20	Solid	9/27/2016 3:00:00 PM	200.7, 200.8, 7473
PWMLP1	A8M5-2663	C161105-21	Solid	9/28/2016 2:15:00 PM	200.7, 200.8, 7473

It should be noted that the reviewer used laboratory sample names to identify specific sample fractions in this report.

II. Sample Management

According to the Sample Receipt Form (SRF) in SDG C161003 (identified by the client as applicable to this SDG), the samples were received within the temperature limits of >0°C to <6°C, and were received intact and properly preserved. The chain of custody (COC) was signed and dated by field and/or laboratory personnel. Custody seals were absent; the SRF indicated that the samples were “dropped off.”

Data Qualifier Reference Table

Qualifier	Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit. The associated value is the quantitation limit or the estimated detection limit for dioxins or PCB congeners.	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit. The associated value is the sample detection limit or the quantitation limit for perchlorate only.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
J+	Not applicable	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample, and may have a potential positive bias.
J-	Not applicable	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample, and may have a potential negative bias.
UJ	The analyte was not deemed above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."	Not applicable.

Qualifier	Organics	Inorganics
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	Not applicable.
R	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.

Qualification Code Reference Table

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
C	Calibration %RSD or %D was noncompliant.	Correlation coefficient is <0.995 or calibration was noncompliant.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
B	Presumed contamination as indicated by the preparation (method) blank results.	Presumed contamination as indicated by the preparation (method) or calibration blank results.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
L1	LCS/LCSD RPD was outside control limits.	LCS/LCSD RPD was outside control limits.
Q	MS/MSD recovery was poor.	MS recovery was poor.
Q1	MS/MSD RPD was outside control limits.	MS/MSD RPD was outside control limits.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	ICPMS tune was not compliant.
T	Presumed contamination as indicated by the trip blank results.	Not applicable.
+	False positive – reported compound was not present.	Not applicable.
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination as indicated by the FB or ER results.	Presumed contamination as indicated by the FB or ER results.
F1	Field duplicate results were outside the control limit.	Field duplicate results were outside the control limit.
$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.

Qualifier	Organics	Inorganics
D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
*II, *III	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.

III. Method Analyses

A. Methods 200.7, 200.8, 7473 and 2340B—Metals, Mercury and Hardness

Reviewed By: M. Hilchey
Date Reviewed: January 6, 2017

The samples listed in Table 1 for these analyses were validated based on the guidelines outlined in the *Quality Assurance Project Plan for U. S. EPA Region 8 CERCLA Site Assessment* (Rev. 2015); *United States Environmental Protection Agency Method 200.7, 200.8, 7473 and SM2340B;* and the *National Functional Guidelines for Inorganic Superfund Data Review* (2014).

- Holding Times: The analytical holding times, 28 days for mercury and six months for the remaining metals, were met with the following exception. All samples were analyzed past the required holding time but within 2x the requirement for mercury. Results for mercury were qualified as estimated with low potential bias (J-).
- Instrument tune: All ICPMS tuning requirements were met.
- Calibration: The initial calibration summaries indicated that the method calibration criteria were met. Initial (ICV) and continuing calibration (CCV) verification frequency requirements were met. ICV and CCV recoveries were within 90-110% for Methods 200.7 and 200.8 and within 85-115% for Method 7473 with the exception noted in the table below. Results for associated samples were qualified as estimated with high potential bias (J+); however, the bias was removed due to the conflict with the holding time negative bias (See Section: Holding Times). The reporting limit check standards met laboratory recovery limits.

Analyte	CCV recovery	Qualified Samples
mercury	115.3%	All site samples except C161105-01, C161105-08, C161105-20, C161105-21

- Method Blanks: No target analytes were reported in the method blanks or calibration blanks of sufficient concentration to qualify site sample results.
- Interference Check Samples (ICSA/B): ICSA/B results are not evaluated at a Stage 2B validation.
- Laboratory Control Samples (LCS): The LCS recoveries were within the laboratory control limits for all target analytes.
- Laboratory Duplicates Laboratory duplicate analyses were performed on samples C161105-01 and C161105-12 for Methods 200.7 and 200.8, and on samples C161105-01 and C161105-08 for Method 7473. All RPDs met the laboratory control limits.
- Matrix Spike: Matrix spike analyses were performed on samples C161105-01, C161105-02 and C161105-12 for Methods 200.7 and 200.8. Matrix spike/matrix spike duplicate analyses were

performed on samples C161105-01 and C161105-08 for Method 7473. Recoveries were not assessed when the parent sample concentrations were more than 4× the spike amount. Recoveries for all target analytes met laboratory control limits of 70-130% except as noted in the table below. Detected antimony results of all samples were qualified as estimated with low potential bias (J-). Nondetect antimony results of all samples were qualified as rejected (R) since all nondetects were associated with a recovery <30%. MS/MSD RPDs for Method 7473 were ≤20%.

Analyte	Matrix spike recovery	Parent sample
antimony	42%	C161105-01
	53%	C161105-02
	26%	C161105-12

- Post Digestion Spike: Post digestion spike analyses were not reported.
- Serial Dilution: Serial dilution analysis was performed on samples C161105-01 and 161105-12 for Methods 200.7 and 200.8. Results were not assessed unless the parent sample concentration was >50× the MDL. The control limit of ≤10% difference of the original sample results was met for all target analytes with the exception of nickel (17%) in sample C161105-01. Nickel results for all site samples except C161105-12 (which had a passing %D) were qualified as estimated (J).
- Internal Standards: All site sample ICPMS internal standard (IS) intensities were within 60-125% of the response in the calibration blank for reported target analytes. The IS intensity for germanium-72 in sample C161105-04 was 125.1%. Based on professional judgment, this value rounds down to meet the control limit; therefore, no qualifications were applied.
- Sample Result Verification: Analyte quantification was not verified at a Stage 2B validation. Detects below the reporting limit were qualified as estimated (J). Nondetects are valid to the RL.

  All samples were diluted 10x for Methods 200.7 and 200.8. Detected results for additional dilutions were flagged with "D" by the laboratory. Reporting limits were adjusted accordingly.

  It should be noted that the laboratory used the "D" flag for all detected mercury results, but the data included no indication of dilution for mercury in any samples.

  It should be noted that the result for mercury in sample C161105-01 exceeded the high calibration standard. The result was flagged "E" by the laboratory and the result was flagged as estimated by the reviewer with the bias for the holding time removed as it was unclear how the exceedance of the instrument linear range affected the sample result bias.
- Field QC Samples: MEC^X evaluated field QC samples, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. MEC^X used the remaining detects to evaluate the associated site samples. Findings associated with field QC samples are summarized below.
  - Field Blanks and Equipment Blanks: No samples were identified as field or equipment blanks in this SDG

- Field Duplicates: No samples were identified as field duplicates in this SDG

Validated Sample Result Forms C161105

Analysis Method ICPMS Tot. Rec. Metals

Lab Sample Name: C161105-01 **Sample No:** A8M5-2643 **Sample Date:** 9/27/2016 10:00:00 AM

Location A34 **Matrix Type:** Solid (dry wt basis)

Analyte	CAS No	Result Value	Sample Adjusted CRQL	Sample Adjusted MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Antimony	7440-36-0	6820	1010	503	ug/kg dry	D	J-	Q
Arsenic	7440-38-2	28500	2010	503	ug/kg dry	D		
Cadmium	7440-43-9	20200	201	101	ug/kg dry	D		
Chromium	7440-47-3	9270	2010	1010	ug/kg dry	D		
Copper	7440-50-8	612000	1010	503	ug/kg dry	D		
Lead	7439-92-1	5550000	201	101	ug/kg dry	D		
Nickel	7440-02-0	13200	1010	503	ug/kg dry	JD	J	A
Selenium	7782-49-2	1070	2010	1010	ug/kg dry	JD	J	
Silver	7440-22-4	20200	1010	503	ug/kg dry	D		
Thallium	7440-28-0	<2010	2010	1010	ug/kg dry	U	U	

Lab Sample Name: C161105-02 **Sample No:** A8M5-2644 **Sample Date:** 9/29/2016 8:30:00 AM

Location A41A **Matrix Type:** Solid (dry wt basis)

Analyte	CAS No	Result Value	Sample Adjusted CRQL	Sample Adjusted MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Antimony	7440-36-0	516	996	498	ug/kg dry	JD	J-	Q
Arsenic	7440-38-2	14100	1990	498	ug/kg dry	D		
Cadmium	7440-43-9	2370	199	99.6	ug/kg dry	D		
Chromium	7440-47-3	3500	1990	996	ug/kg dry	D		
Copper	7440-50-8	83200	996	498	ug/kg dry	D		
Lead	7439-92-1	372000	199	99.6	ug/kg dry	D		
Nickel	7440-02-0	6080	996	498	ug/kg dry	D	J	A
Selenium	7782-49-2	<1990	1990	996	ug/kg dry	U	U	
Silver	7440-22-4	2350	996	498	ug/kg dry	D		
Thallium	7440-28-0	1510	1990	996	ug/kg dry	JD	J	

Lab Sample Name: C161105-03 **Sample No:** A8M5-2645 **Sample Date:** 9/27/2016 10:25:00 AM

Location A68 **Matrix Type:** Solid (dry wt basis)

Analyte	CAS No	Result Value	Sample Adjusted CRQL	Sample Adjusted MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Antimony	7440-36-0	914	1000	502	ug/kg dry	JD	J-	Q
Arsenic	7440-38-2	19200	2010	502	ug/kg dry	D		
Cadmium	7440-43-9	7180	201	100	ug/kg dry	D		
Chromium	7440-47-3	3890	2010	1000	ug/kg dry	D		
Copper	7440-50-8	204000	1000	502	ug/kg dry	D		
Lead	7439-92-1	1110000	201	100	ug/kg dry	D		
Nickel	7440-02-0	6260	1000	502	ug/kg dry	D	J	A

Analysis Method ICPMS Tot. Rec. Metals

Selenium		7782-49-2	<2010	2010	1000	ug/kg dry	U	U	
Silver		7440-22-4	3520	1000	502	ug/kg dry	D		
Thallium		7440-28-0	1940	2010	1000	ug/kg dry	JD	J	

Lab Sample Name: C161105-04 **Sample No:** A8M5-2646 **Sample Date:** 9/29/2016 2:15:00 PM

Location CC18B **Matrix Type:** Solid (dry wt basis)

Analyte	CAS No	Result Value	Sample Adjusted CRQL	Sample Adjusted MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Antimony	7440-36-0	1520	996	498	ug/kg dry	D	J-	Q
Arsenic	7440-38-2	35700	1990	498	ug/kg dry	D		
Cadmium	7440-43-9	2150	199	99.6	ug/kg dry	D		
Chromium	7440-47-3	5910	1990	996	ug/kg dry	D		
Copper	7440-50-8	141000	996	498	ug/kg dry	D		
Lead	7439-92-1	907000	199	99.6	ug/kg dry	D		
Nickel	7440-02-0	3790	996	498	ug/kg dry	D	J	A
Selenium	7782-49-2	1570	1990	996	ug/kg dry	JD	J	
Silver	7440-22-4	4660	996	498	ug/kg dry	D		
Thallium	7440-28-0	<1990	1990	996	ug/kg dry	U	U	

Lab Sample Name: C161105-05 **Sample No:** A8M5-2647 **Sample Date:** 9/28/2016 5:10:00 PM

Location CC21D **Matrix Type:** Solid (dry wt basis)

Analyte	CAS No	Result Value	Sample Adjusted CRQL	Sample Adjusted MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Antimony	7440-36-0	1760	995	497	ug/kg dry	D	J-	Q
Arsenic	7440-38-2	24000	1990	497	ug/kg dry	D		
Cadmium	7440-43-9	217	199	99.5	ug/kg dry	D		
Chromium	7440-47-3	3110	1990	995	ug/kg dry	D		
Copper	7440-50-8	23800	995	497	ug/kg dry	D		
Lead	7439-92-1	345000	199	99.5	ug/kg dry	D		
Nickel	7440-02-0	870	995	497	ug/kg dry	JD	J	A
Selenium	7782-49-2	3530	1990	995	ug/kg dry	D		
Silver	7440-22-4	1840	995	497	ug/kg dry	D		
Thallium	7440-28-0	<1990	1990	995	ug/kg dry	U	U	

Lab Sample Name: C161105-06 **Sample No:** A8M5-2648 **Sample Date:** 9/29/2016 12:00:00 PM

Location CC24C **Matrix Type:** Solid (dry wt basis)

Analyte	CAS No	Result Value	Sample Adjusted CRQL	Sample Adjusted MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Antimony	7440-36-0	1050	1010	505	ug/kg dry	D	J-	Q
Arsenic	7440-38-2	48800	2020	505	ug/kg dry	D		
Cadmium	7440-43-9	113	202	101	ug/kg dry	JD	J	
Chromium	7440-47-3	3250	2020	1010	ug/kg dry	D		
Copper	7440-50-8	40000	1010	505	ug/kg dry	D		
Lead	7439-92-1	220000	202	101	ug/kg dry	D		
Nickel	7440-02-0	1470	1010	505	ug/kg dry	D	J	A

Analysis Method ICPMS Tot. Rec. Metals

Selenium		7782-49-2	1370	2020	1010	ug/kg dry	JD	J	
Silver		7440-22-4	1330	1010	505	ug/kg dry	D		
Thallium		7440-28-0	<2020	2020	1010	ug/kg dry	U	U	

Lab Sample Name: C161105-07 **Sample No:** A8M5-2649 **Sample Date:** 9/29/2016 9:15:00 AM

Location CC25 **Matrix Type:** Solid (dry wt basis)

Analyte	CAS No	Result Value	Sample Adjusted CRQL	Sample Adjusted MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Antimony	7440-36-0	4730	983	492	ug/kg dry	D	J-	Q
Arsenic	7440-38-2	51400	1970	492	ug/kg dry	D		
Cadmium	7440-43-9	267	197	98.3	ug/kg dry	D		
Chromium	7440-47-3	2460	1970	983	ug/kg dry	D		
Copper	7440-50-8	26500	983	492	ug/kg dry	D		
Lead	7439-92-1	594000	197	98.3	ug/kg dry	D		
Nickel	7440-02-0	960	983	492	ug/kg dry	JD	J	A
Selenium	7782-49-2	3100	1970	983	ug/kg dry	D		
Silver	7440-22-4	4620	983	492	ug/kg dry	D		
Thallium	7440-28-0	<1970	1970	983	ug/kg dry	U	U	

Lab Sample Name: C161105-08 **Sample No:** A8M5-2650 **Sample Date:** 9/28/2016 4:20:00 PM

Location CC26 **Matrix Type:** Solid (dry wt basis)

Analyte	CAS No	Result Value	Sample Adjusted CRQL	Sample Adjusted MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Antimony	7440-36-0	3320	993	497	ug/kg dry	D	J-	Q
Arsenic	7440-38-2	83800	1990	497	ug/kg dry	D		
Cadmium	7440-43-9	2160	199	99.3	ug/kg dry	D		
Chromium	7440-47-3	2880	1990	993	ug/kg dry	D		
Copper	7440-50-8	53400	993	497	ug/kg dry	D		
Lead	7439-92-1	437000	199	99.3	ug/kg dry	D		
Nickel	7440-02-0	1590	993	497	ug/kg dry	D	J	A
Selenium	7782-49-2	2180	1990	993	ug/kg dry	D		
Silver	7440-22-4	3660	993	497	ug/kg dry	D		
Thallium	7440-28-0	<1990	1990	993	ug/kg dry	U	U	

Lab Sample Name: C161105-09 **Sample No:** A8M5-2651 **Sample Date:** 9/28/2016 8:48:00 AM

Location CC38 **Matrix Type:** Solid (dry wt basis)

Analyte	CAS No	Result Value	Sample Adjusted CRQL	Sample Adjusted MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Antimony	7440-36-0	563	1010	504	ug/kg dry	JD	J-	Q
Arsenic	7440-38-2	28800	2010	504	ug/kg dry	D		
Cadmium	7440-43-9	1270	201	101	ug/kg dry	D		
Chromium	7440-47-3	3680	2010	1010	ug/kg dry	D		
Copper	7440-50-8	54500	1010	504	ug/kg dry	D		
Lead	7439-92-1	598000	201	101	ug/kg dry	D		
Nickel	7440-02-0	3200	1010	504	ug/kg dry	D	J	A

Analysis Method ICPMS Tot. Rec. Metals

Analyte	CAS No	Result Value	Sample Adjusted CRQL	Sample Adjusted MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Selenium	7782-49-2	<2010	2010	1010	ug/kg dry	U	U	
Silver	7440-22-4	2560	1010	504	ug/kg dry	D		
Thallium	7440-28-0	<2010	2010	1010	ug/kg dry	U	U	

Lab Sample Name: C161105-10 **Sample No:** A8M5-2652 **Sample Date:** 9/28/2016 10:40:00 AM

Location CC38D **Matrix Type:** Solid (dry wt basis)

Analyte	CAS No	Result Value	Sample Adjusted CRQL	Sample Adjusted MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Antimony	7440-36-0	543	998	499	ug/kg dry	JD	J-	Q
Arsenic	7440-38-2	47600	2000	499	ug/kg dry	D		
Cadmium	7440-43-9	2320	200	99.8	ug/kg dry	D		
Chromium	7440-47-3	2670	2000	998	ug/kg dry	D		
Copper	7440-50-8	68600	998	499	ug/kg dry	D		
Lead	7439-92-1	648000	200	99.8	ug/kg dry	D		
Nickel	7440-02-0	3410	998	499	ug/kg dry	D	J	A
Selenium	7782-49-2	<2000	2000	998	ug/kg dry	U	U	
Silver	7440-22-4	2390	998	499	ug/kg dry	D		
Thallium	7440-28-0	<2000	2000	998	ug/kg dry	U	U	

Lab Sample Name: C161105-11 **Sample No:** A8M5-2653 **Sample Date:** 9/29/2016 4:00:00 PM

Location EG2 **Matrix Type:** Solid (dry wt basis)

Analyte	CAS No	Result Value	Sample Adjusted CRQL	Sample Adjusted MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Antimony	7440-36-0	<997	997	498	ug/kg dry	U	R	Q
Arsenic	7440-38-2	18400	1990	498	ug/kg dry	D		
Cadmium	7440-43-9	886	199	99.7	ug/kg dry	D		
Chromium	7440-47-3	5250	1990	997	ug/kg dry	D		
Copper	7440-50-8	68300	997	498	ug/kg dry	D		
Lead	7439-92-1	152000	199	99.7	ug/kg dry	D		
Nickel	7440-02-0	7530	997	498	ug/kg dry	D	J	A
Selenium	7782-49-2	<1990	1990	997	ug/kg dry	U	U	
Silver	7440-22-4	798	997	498	ug/kg dry	JD	J	
Thallium	7440-28-0	<1990	1990	997	ug/kg dry	U	U	

Lab Sample Name: C161105-12 **Sample No:** A8M5-2654 **Sample Date:** 9/29/2016 3:30:00 PM

Location EG2A **Matrix Type:** Solid (dry wt basis)

Analyte	CAS No	Result Value	Sample Adjusted CRQL	Sample Adjusted MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Antimony	7440-36-0	<996	996	498	ug/kg dry	U	R	Q
Arsenic	7440-38-2	25000	1990	498	ug/kg dry	D		
Cadmium	7440-43-9	1610	199	99.6	ug/kg dry	D		
Chromium	7440-47-3	7090	1990	996	ug/kg dry	D		
Copper	7440-50-8	87400	996	498	ug/kg dry	D		
Lead	7439-92-1	406000	199	99.6	ug/kg dry	D		
Nickel	7440-02-0	6840	996	498	ug/kg dry	D		

Analysis Method ICPMS Tot. Rec. Metals

Selenium		7782-49-2	<1990	1990	996	ug/kg dry	U	U	
Silver		7440-22-4	1510	996	498	ug/kg dry	D		
Thallium		7440-28-0	<1990	1990	996	ug/kg dry	U	U	

Lab Sample Name: C161105-13 **Sample No:** A8M5-2655 **Sample Date:** 9/29/2016 1:00:00 PM

Location EG3A **Matrix Type:** Solid (dry wt basis)

Analyte	CAS No	Result Value	Sample Adjusted CRQL	Sample Adjusted MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Antimony	7440-36-0	571	1000	502	ug/kg dry	JD	J-	Q
Arsenic	7440-38-2	21200	2010	502	ug/kg dry	D		
Cadmium	7440-43-9	854	201	100	ug/kg dry	D		
Chromium	7440-47-3	4830	2010	1000	ug/kg dry	D		
Copper	7440-50-8	117000	1000	502	ug/kg dry	D		
Lead	7439-92-1	735000	201	100	ug/kg dry	D		
Nickel	7440-02-0	9360	1000	502	ug/kg dry	D	J	A
Selenium	7782-49-2	<2010	2010	1000	ug/kg dry	U	U	
Silver	7440-22-4	5000	1000	502	ug/kg dry	D		
Thallium	7440-28-0	1640	2010	1000	ug/kg dry	JD	J	

Lab Sample Name: C161105-14 **Sample No:** A8M5-2656 **Sample Date:** 9/28/2016 4:15:00 PM

Location EG5 **Matrix Type:** Solid (dry wt basis)

Analyte	CAS No	Result Value	Sample Adjusted CRQL	Sample Adjusted MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Antimony	7440-36-0	581	1000	501	ug/kg dry	JD	J-	Q
Arsenic	7440-38-2	39700	2000	501	ug/kg dry	D		
Cadmium	7440-43-9	6410	200	100	ug/kg dry	D		
Chromium	7440-47-3	6160	2000	1000	ug/kg dry	D		
Copper	7440-50-8	222000	1000	501	ug/kg dry	D		
Lead	7439-92-1	842000	200	100	ug/kg dry	D		
Nickel	7440-02-0	9000	1000	501	ug/kg dry	D	J	A
Selenium	7782-49-2	<2000	2000	1000	ug/kg dry	U	U	
Silver	7440-22-4	6740	1000	501	ug/kg dry	D		
Thallium	7440-28-0	<2000	2000	1000	ug/kg dry	U	U	

Lab Sample Name: C161105-15 **Sample No:** A8M5-2657 **Sample Date:** 9/29/2016 4:35:00 PM

Location M12 **Matrix Type:** Solid (dry wt basis)

Analyte	CAS No	Result Value	Sample Adjusted CRQL	Sample Adjusted MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Antimony	7440-36-0	<999	999	500	ug/kg dry	U	R	Q
Arsenic	7440-38-2	16500	2000	500	ug/kg dry	D		
Cadmium	7440-43-9	1760	200	99.9	ug/kg dry	D		
Chromium	7440-47-3	8700	2000	999	ug/kg dry	D		
Copper	7440-50-8	53500	999	500	ug/kg dry	D		
Lead	7439-92-1	225000	200	99.9	ug/kg dry	D		
Nickel	7440-02-0	10500	999	500	ug/kg dry	D	J	A

Analysis Method ICPMS Tot. Rec. Metals

Selenium		7782-49-2	<2000	2000	999	ug/kg dry	U	U	
Silver		7440-22-4	569	999	500	ug/kg dry	JD	J	
Thallium		7440-28-0	<2000	2000	999	ug/kg dry	U	U	

Lab Sample Name: C161105-16 **Sample No:** A8M5-2658 **Sample Date:** 9/28/2016 4:30:00 PM

Location M14 **Matrix Type:** Solid (dry wt basis)

Analyte	CAS No	Result Value	Sample Adjusted CRQL	Sample Adjusted MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Antimony	7440-36-0	<1000	1000	501	ug/kg dry	U	R	Q
Arsenic	7440-38-2	12100	2010	501	ug/kg dry	D		
Cadmium	7440-43-9	<201	201	100	ug/kg dry	U	U	
Chromium	7440-47-3	1980	2010	1000	ug/kg dry	JD	J	
Copper	7440-50-8	21300	1000	501	ug/kg dry	D		
Lead	7439-92-1	102000	201	100	ug/kg dry	D		
Nickel	7440-02-0	1270	1000	501	ug/kg dry	D	J	A
Selenium	7782-49-2	1210	2010	1000	ug/kg dry	JD	J	
Silver	7440-22-4	585	1000	501	ug/kg dry	JD	J	
Thallium	7440-28-0	<2010	2010	1000	ug/kg dry	U	U	

Lab Sample Name: C161105-17 **Sample No:** A8M5-2659 **Sample Date:** 9/27/2016 5:30:00 PM

Location M24D **Matrix Type:** Solid (dry wt basis)

Analyte	CAS No	Result Value	Sample Adjusted CRQL	Sample Adjusted MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Antimony	7440-36-0	511	997	499	ug/kg dry	JD	J-	Q
Arsenic	7440-38-2	9490	1990	499	ug/kg dry	D		
Cadmium	7440-43-9	44300	199	99.7	ug/kg dry	D		
Chromium	7440-47-3	6170	1990	997	ug/kg dry	D		
Copper	7440-50-8	347000	997	499	ug/kg dry	D		
Lead	7439-92-1	466000	199	99.7	ug/kg dry	D		
Nickel	7440-02-0	16000	997	499	ug/kg dry	D	J	A
Selenium	7782-49-2	<1990	1990	997	ug/kg dry	U	U	
Silver	7440-22-4	2750	997	499	ug/kg dry	D		
Thallium	7440-28-0	<1990	1990	997	ug/kg dry	U	U	

Lab Sample Name: C161105-18 **Sample No:** A8M5-2660 **Sample Date:** 9/27/2016 5:00:00 PM

Location M25 **Matrix Type:** Solid (dry wt basis)

Analyte	CAS No	Result Value	Sample Adjusted CRQL	Sample Adjusted MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Antimony	7440-36-0	<1010	1010	503	ug/kg dry	U	R	Q
Arsenic	7440-38-2	4570	2010	503	ug/kg dry	D		
Cadmium	7440-43-9	1140	201	101	ug/kg dry	D		
Chromium	7440-47-3	6620	2010	1010	ug/kg dry	D		
Copper	7440-50-8	14900	1010	503	ug/kg dry	D		
Lead	7439-92-1	60700	201	101	ug/kg dry	D		
Nickel	7440-02-0	5280	1010	503	ug/kg dry	D	J	A

Analysis Method ICPMS Tot. Rec. Metals

Selenium		7782-49-2	<2010	2010	1010	ug/kg dry	U	U	
Silver		7440-22-4	<1010	1010	503	ug/kg dry	U	U	
Thallium		7440-28-0	<2010	2010	1010	ug/kg dry	U	U	

Lab Sample Name: C161105-19 **Sample No:** A8M5-2661 **Sample Date:** 9/28/2016 9:35:00 AM

Location M26B **Matrix Type:** Solid (dry wt basis)

Analyte	CAS No	Result Value	Sample Adjusted CRQL	Sample Adjusted MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Antimony	7440-36-0	<1000	1000	500	ug/kg dry	U	R	Q
Arsenic	7440-38-2	11300	2000	500	ug/kg dry	D		
Cadmium	7440-43-9	1650	200	100	ug/kg dry	D		
Chromium	7440-47-3	3190	2000	1000	ug/kg dry	D		
Copper	7440-50-8	23000	1000	500	ug/kg dry	D		
Lead	7439-92-1	175000	200	100	ug/kg dry	D		
Nickel	7440-02-0	7560	1000	500	ug/kg dry	D	J	A
Selenium	7782-49-2	<2000	2000	1000	ug/kg dry	U	U	
Silver	7440-22-4	768	1000	500	ug/kg dry	JD	J	
Thallium	7440-28-0	<2000	2000	1000	ug/kg dry	U	U	

Lab Sample Name: C161105-20 **Sample No:** A8M5-2662 **Sample Date:** 9/27/2016 3:00:00 PM

Location M27 **Matrix Type:** Solid (dry wt basis)

Analyte	CAS No	Result Value	Sample Adjusted CRQL	Sample Adjusted MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Antimony	7440-36-0	<991	991	495	ug/kg dry	U	R	Q
Arsenic	7440-38-2	26000	1980	495	ug/kg dry	D		
Cadmium	7440-43-9	949	198	99.1	ug/kg dry	D		
Chromium	7440-47-3	2860	1980	991	ug/kg dry	D		
Copper	7440-50-8	52800	991	495	ug/kg dry	D		
Lead	7439-92-1	276000	198	99.1	ug/kg dry	D		
Nickel	7440-02-0	2080	991	495	ug/kg dry	D	J	A
Selenium	7782-49-2	1150	1980	991	ug/kg dry	JD	J	
Silver	7440-22-4	815	991	495	ug/kg dry	JD	J	
Thallium	7440-28-0	<1980	1980	991	ug/kg dry	U	U	

Lab Sample Name: C161105-21 **Sample No:** A8M5-2663 **Sample Date:** 9/28/2016 2:15:00 PM

Location PWMLP1 **Matrix Type:** Solid (dry wt basis)

Analyte	CAS No	Result Value	Sample Adjusted CRQL	Sample Adjusted MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Antimony	7440-36-0	15800	981	491	ug/kg dry	D	J-	Q
Arsenic	7440-38-2	445000	1960	491	ug/kg dry	D		
Cadmium	7440-43-9	15700	196	98.1	ug/kg dry	D		
Chromium	7440-47-3	4330	1960	981	ug/kg dry	D		
Copper	7440-50-8	722000	981	491	ug/kg dry	D		
Lead	7439-92-1	6330000	196	98.1	ug/kg dry	D		
Nickel	7440-02-0	3600	981	491	ug/kg dry	D	J	A

Analysis Method ICPMS Tot. Rec. Metals

Selenium	7782-49-2	2400	1960	981	ug/kg dry	D	
Silver	7440-22-4	18600	981	491	ug/kg dry	D	
Thallium	7440-28-0	<1960	1960	981	ug/kg dry	U	U

Analysis Method ICPOE Tot. Rec. Metals

Lab Sample Name: C161105-01 **Sample No:** A8M5-2643 **Sample Date:** 9/27/2016 10:00:00 AM

Location A34 **Matrix Type:** Solid (dry wt basis)

Analyte	CAS No	Result Value	Sample Adjusted CRQL	Sample Adjusted MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Aluminum	7429-90-5	9520	50.3	20.1	mg/kg dr	D		
Beryllium	7440-41-7	<5.03	5.03	1.01	mg/kg dr	U	U	
Calcium	7440-70-2	2460	252	101	mg/kg dr	D		
Iron	7439-89-6	42100	252	101	mg/kg dr	D		
Magnesium	7439-95-4	4510	252	101	mg/kg dr	D		
Manganese	7439-96-5	5330	5.03	2.01	mg/kg dr	D		
Silica (SiO2)	763-18-69	5860	1010	252	mg/kg dr	D		
Strontium	7440-24-6	28.9	10.1	2.01	mg/kg dr	D		
Zinc	7440-66-6	5370	20.1	10.1	mg/kg dr	D		

Lab Sample Name: C161105-02 **Sample No:** A8M5-2644 **Sample Date:** 9/29/2016 8:30:00 AM

Location A41A **Matrix Type:** Solid (dry wt basis)

Analyte	CAS No	Result Value	Sample Adjusted CRQL	Sample Adjusted MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Aluminum	7429-90-5	8700	49.8	19.9	mg/kg dr	D		
Beryllium	7440-41-7	<4.98	4.98	0.996	mg/kg dr	U	U	
Calcium	7440-70-2	3110	249	99.6	mg/kg dr	D		
Iron	7439-89-6	27600	249	99.6	mg/kg dr	D		
Magnesium	7439-95-4	5040	249	99.6	mg/kg dr	D		
Manganese	7439-96-5	2360	4.98	1.99	mg/kg dr	D		
Silica (SiO2)	763-18-69	4800	996	249	mg/kg dr	D		
Strontium	7440-24-6	40.7	9.96	1.99	mg/kg dr	D		
Zinc	7440-66-6	529	19.9	9.96	mg/kg dr	D		

Lab Sample Name: C161105-03 **Sample No:** A8M5-2645 **Sample Date:** 9/27/2016 10:25:00 AM

Location A68 **Matrix Type:** Solid (dry wt basis)

Analyte	CAS No	Result Value	Sample Adjusted CRQL	Sample Adjusted MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Aluminum	7429-90-5	8680	50.2	20.1	mg/kg dr	D		
Beryllium	7440-41-7	1.04	5.02	1.00	mg/kg dr	JD	J	
Calcium	7440-70-2	2710	251	100	mg/kg dr	D		
Iron	7439-89-6	27200	251	100	mg/kg dr	D		
Magnesium	7439-95-4	5070	251	100	mg/kg dr	D		
Manganese	7439-96-5	6870	5.02	2.01	mg/kg dr	D		
Silica (SiO2)	763-18-69	5260	1000	251	mg/kg dr	D		

Analysis Method ICPOE Tot. Rec. Metals

Strontium		7440-24-6	29.2	10.0	2.01	mg/kg dr	D	
Zinc		7440-66-6	1620	20.1	10.0	mg/kg dr	D	

Lab Sample Name: C161105-04 **Sample No:** A8M5-2646 **Sample Date:** 9/29/2016 2:15:00 PM

Location CC18B **Matrix Type:** Solid (dry wt basis)

Analyte	CAS No	Result Value	Sample Adjusted CRQL	Sample Adjusted MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Aluminum	7429-90-5	7640	49.8	19.9	mg/kg dr	D		
Beryllium	7440-41-7	<4.98	4.98	0.996	mg/kg dr	U	U	
Calcium	7440-70-2	851	249	99.6	mg/kg dr	D		
Iron	7439-89-6	64000	249	99.6	mg/kg dr	D		
Magnesium	7439-95-4	4300	249	99.6	mg/kg dr	D		
Manganese	7439-96-5	1030	4.98	1.99	mg/kg dr	D		
Silica (SiO2)	763-18-69	4730	996	249	mg/kg dr	D		
Strontium	7440-24-6	95.4	9.96	1.99	mg/kg dr	D		
Zinc	7440-66-6	655	19.9	9.96	mg/kg dr	D		

Lab Sample Name: C161105-05 **Sample No:** A8M5-2647 **Sample Date:** 9/28/2016 5:10:00 PM

Location CC21D **Matrix Type:** Solid (dry wt basis)

Analyte	CAS No	Result Value	Sample Adjusted CRQL	Sample Adjusted MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Aluminum	7429-90-5	3140	49.7	19.9	mg/kg dr	D		
Beryllium	7440-41-7	<4.97	4.97	0.995	mg/kg dr	U	U	
Calcium	7440-70-2	122	249	99.5	mg/kg dr	JD	J	
Iron	7439-89-6	30600	249	99.5	mg/kg dr	D		
Magnesium	7439-95-4	1780	249	99.5	mg/kg dr	D		
Manganese	7439-96-5	180	4.97	1.99	mg/kg dr	D		
Silica (SiO2)	763-18-69	2800	995	249	mg/kg dr	D		
Strontium	7440-24-6	57.1	9.95	1.99	mg/kg dr	D		
Zinc	7440-66-6	77.9	19.9	9.95	mg/kg dr	D		

Lab Sample Name: C161105-06 **Sample No:** A8M5-2648 **Sample Date:** 9/29/2016 12:00:00 PM

Location CC24C **Matrix Type:** Solid (dry wt basis)

Analyte	CAS No	Result Value	Sample Adjusted CRQL	Sample Adjusted MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Aluminum	7429-90-5	4740	50.5	20.2	mg/kg dr	D		
Beryllium	7440-41-7	<5.05	5.05	1.01	mg/kg dr	U	U	
Calcium	7440-70-2	233	253	101	mg/kg dr	JD	J	
Iron	7439-89-6	39500	253	101	mg/kg dr	D		
Magnesium	7439-95-4	1060	253	101	mg/kg dr	D		
Manganese	7439-96-5	166	5.05	2.02	mg/kg dr	D		
Silica (SiO2)	763-18-69	3550	1010	253	mg/kg dr	D		
Strontium	7440-24-6	152	10.1	2.02	mg/kg dr	D		
Zinc	7440-66-6	39.4	20.2	10.1	mg/kg dr	D		

Analysis Method ICPOE Tot. Rec. Metals

Lab Sample Name: C161105-07 **Sample No:** A8M5-2649 **Sample Date:** 9/29/2016 9:15:00 AM

Location CC25 **Matrix Type:** Solid (dry wt basis)

Analyte	CAS No	Result Value	Sample Adjusted CRQL	Sample Adjusted MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Aluminum	7429-90-5	2790	49.2	19.7	mg/kg dr	D		
Beryllium	7440-41-7	<4.92	4.92	0.983	mg/kg dr	U	U	
Calcium	7440-70-2	189	246	98.3	mg/kg dr	JD	J	
Iron	7439-89-6	29400	246	98.3	mg/kg dr	D		
Magnesium	7439-95-4	825	246	98.3	mg/kg dr	D		
Manganese	7439-96-5	126	4.92	1.97	mg/kg dr	D		
Silica (SiO2)	763-18-69	2850	983	246	mg/kg dr	D		
Strontium	7440-24-6	74.6	9.83	1.97	mg/kg dr	D		
Zinc	7440-66-6	72.1	19.7	9.83	mg/kg dr	D		

Lab Sample Name: C161105-08 **Sample No:** A8M5-2650 **Sample Date:** 9/28/2016 4:20:00 PM

Location CC26 **Matrix Type:** Solid (dry wt basis)

Analyte	CAS No	Result Value	Sample Adjusted CRQL	Sample Adjusted MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Aluminum	7429-90-5	4050	49.7	19.9	mg/kg dr	D		
Beryllium	7440-41-7	<4.97	4.97	0.993	mg/kg dr	U	U	
Calcium	7440-70-2	415	248	99.3	mg/kg dr	D		
Iron	7439-89-6	38300	248	99.3	mg/kg dr	D		
Magnesium	7439-95-4	1700	248	99.3	mg/kg dr	D		
Manganese	7439-96-5	197	4.97	1.99	mg/kg dr	D		
Silica (SiO2)	763-18-69	3280	993	248	mg/kg dr	D		
Strontium	7440-24-6	50.3	9.93	1.99	mg/kg dr	D		
Zinc	7440-66-6	570	19.9	9.93	mg/kg dr	D		

Lab Sample Name: C161105-09 **Sample No:** A8M5-2651 **Sample Date:** 9/28/2016 8:48:00 AM

Location CC38 **Matrix Type:** Solid (dry wt basis)

Analyte	CAS No	Result Value	Sample Adjusted CRQL	Sample Adjusted MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Aluminum	7429-90-5	7010	50.4	20.1	mg/kg dr	D		
Beryllium	7440-41-7	<5.04	5.04	1.01	mg/kg dr	U	U	
Calcium	7440-70-2	1050	252	101	mg/kg dr	D		
Iron	7439-89-6	34200	252	101	mg/kg dr	D		
Magnesium	7439-95-4	3220	252	101	mg/kg dr	D		
Manganese	7439-96-5	565	5.04	2.01	mg/kg dr	D		
Silica (SiO2)	763-18-69	4800	1010	252	mg/kg dr	D		
Strontium	7440-24-6	38.8	10.1	2.01	mg/kg dr	D		
Zinc	7440-66-6	392	20.1	10.1	mg/kg dr	D		

Analysis Method ICPOE Tot. Rec. Metals

Lab Sample Name: C161105-10 **Sample No:** A8M5-2652 **Sample Date:** 9/28/2016 10:40:00 AM

Location CC38D **Matrix Type:** Solid (dry wt basis)

Analyte	CAS No	Result Value	Sample Adjusted CRQL	Sample Adjusted MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Aluminum	7429-90-5	5720	49.9	20.0	mg/kg dr	D		
Beryllium	7440-41-7	<4.99	4.99	0.998	mg/kg dr	U	U	
Calcium	7440-70-2	1020	249	99.8	mg/kg dr	D		
Iron	7439-89-6	32200	249	99.8	mg/kg dr	D		
Magnesium	7439-95-4	1980	249	99.8	mg/kg dr	D		
Manganese	7439-96-5	995	4.99	2.00	mg/kg dr	D		
Silica (SiO2)	763-18-69	4020	998	249	mg/kg dr	D		
Strontium	7440-24-6	35.2	9.98	2.00	mg/kg dr	D		
Zinc	7440-66-6	643	20.0	9.98	mg/kg dr	D		

Lab Sample Name: C161105-11 **Sample No:** A8M5-2653 **Sample Date:** 9/29/2016 4:00:00 PM

Location EG2 **Matrix Type:** Solid (dry wt basis)

Analyte	CAS No	Result Value	Sample Adjusted CRQL	Sample Adjusted MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Aluminum	7429-90-5	16100	49.8	19.9	mg/kg dr	D		
Beryllium	7440-41-7	<4.98	4.98	0.997	mg/kg dr	U	U	
Calcium	7440-70-2	2310	249	99.7	mg/kg dr	D		
Iron	7439-89-6	37500	249	99.7	mg/kg dr	D		
Magnesium	7439-95-4	7800	249	99.7	mg/kg dr	D		
Manganese	7439-96-5	1650	4.98	1.99	mg/kg dr	D		
Silica (SiO2)	763-18-69	7150	997	249	mg/kg dr	D		
Strontium	7440-24-6	15.1	9.97	1.99	mg/kg dr	D		
Zinc	7440-66-6	333	19.9	9.97	mg/kg dr	D		

Lab Sample Name: C161105-12 **Sample No:** A8M5-2654 **Sample Date:** 9/29/2016 3:30:00 PM

Location EG2A **Matrix Type:** Solid (dry wt basis)

Analyte	CAS No	Result Value	Sample Adjusted CRQL	Sample Adjusted MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Aluminum	7429-90-5	13900	49.8	19.9	mg/kg dr	D		
Beryllium	7440-41-7	<4.98	4.98	0.996	mg/kg dr	U	U	
Calcium	7440-70-2	1490	249	99.6	mg/kg dr	D		
Iron	7439-89-6	35000	249	99.6	mg/kg dr	D		
Magnesium	7439-95-4	5470	249	99.6	mg/kg dr	D		
Manganese	7439-96-5	2710	4.98	1.99	mg/kg dr	D		
Silica (SiO2)	763-18-69	7140	996	249	mg/kg dr	D		
Strontium	7440-24-6	12.1	9.96	1.99	mg/kg dr	D		
Zinc	7440-66-6	380	19.9	9.96	mg/kg dr	D		

Analysis Method ICPOE Tot. Rec. Metals

Lab Sample Name: C161105-13 **Sample No:** A8M5-2655 **Sample Date:** 9/29/2016 1:00:00 PM

Location EG3A **Matrix Type:** Solid (dry wt basis)

Analyte	CAS No	Result Value	Sample Adjusted CRQL	Sample Adjusted MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Aluminum	7429-90-5	14200	50.2	20.1	mg/kg dr	D		
Beryllium	7440-41-7	<5.02	5.02	1.00	mg/kg dr	U	U	
Calcium	7440-70-2	2490	251	100	mg/kg dr	D		
Iron	7439-89-6	53200	251	100	mg/kg dr	D		
Magnesium	7439-95-4	7940	251	100	mg/kg dr	D		
Manganese	7439-96-5	1880	5.02	2.01	mg/kg dr	D		
Silica (SiO2)	763-18-69	6630	1000	251	mg/kg dr	D		
Strontium	7440-24-6	12.1	10.0	2.01	mg/kg dr	D		
Zinc	7440-66-6	291	20.1	10.0	mg/kg dr	D		

Lab Sample Name: C161105-14 **Sample No:** A8M5-2656 **Sample Date:** 9/28/2016 4:15:00 PM

Location EG5 **Matrix Type:** Solid (dry wt basis)

Analyte	CAS No	Result Value	Sample Adjusted CRQL	Sample Adjusted MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Aluminum	7429-90-5	12100	50.1	20.0	mg/kg dr	D		
Beryllium	7440-41-7	1.03	5.01	1.00	mg/kg dr	JD	J	
Calcium	7440-70-2	2100	251	100	mg/kg dr	D		
Iron	7439-89-6	50400	251	100	mg/kg dr	D		
Magnesium	7439-95-4	6200	251	100	mg/kg dr	D		
Manganese	7439-96-5	4770	5.01	2.00	mg/kg dr	D		
Silica (SiO2)	763-18-69	6500	1000	251	mg/kg dr	D		
Strontium	7440-24-6	34.5	10.0	2.00	mg/kg dr	D		
Zinc	7440-66-6	1140	20.0	10.0	mg/kg dr	D		

Lab Sample Name: C161105-15 **Sample No:** A8M5-2657 **Sample Date:** 9/29/2016 4:35:00 PM

Location M12 **Matrix Type:** Solid (dry wt basis)

Analyte	CAS No	Result Value	Sample Adjusted CRQL	Sample Adjusted MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Aluminum	7429-90-5	9800	50.0	20.0	mg/kg dr	D		
Beryllium	7440-41-7	<5.00	5.00	0.999	mg/kg dr	U	U	
Calcium	7440-70-2	3170	250	99.9	mg/kg dr	D		
Iron	7439-89-6	36900	250	99.9	mg/kg dr	D		
Magnesium	7439-95-4	4760	250	99.9	mg/kg dr	D		
Manganese	7439-96-5	3060	5.00	2.00	mg/kg dr	D		
Silica (SiO2)	763-18-69	6750	999	250	mg/kg dr	D		
Strontium	7440-24-6	37.7	9.99	2.00	mg/kg dr	D		
Zinc	7440-66-6	372	20.0	9.99	mg/kg dr	D		

Analysis Method ICPOE Tot. Rec. Metals

Lab Sample Name: C161105-16 **Sample No:** A8M5-2658 **Sample Date:** 9/28/2016 4:30:00 PM

Location M14 **Matrix Type:** Solid (dry wt basis)

Analyte	CAS No	Result Value	Sample Adjusted CRQL	Sample Adjusted MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Aluminum	7429-90-5	5950	50.1	20.1	mg/kg dr	D		
Beryllium	7440-41-7	<5.01	5.01	1.00	mg/kg dr	U	U	
Calcium	7440-70-2	265	251	100	mg/kg dr	D		
Iron	7439-89-6	32900	251	100	mg/kg dr	D		
Magnesium	7439-95-4	2430	251	100	mg/kg dr	D		
Manganese	7439-96-5	182	5.01	2.01	mg/kg dr	D		
Silica (SiO2)	763-18-69	5190	1000	251	mg/kg dr	D		
Strontium	7440-24-6	60.2	10.0	2.01	mg/kg dr	D		
Zinc	7440-66-6	55.5	20.1	10.0	mg/kg dr	D		

Lab Sample Name: C161105-17 **Sample No:** A8M5-2659 **Sample Date:** 9/27/2016 5:30:00 PM

Location M24D **Matrix Type:** Solid (dry wt basis)

Analyte	CAS No	Result Value	Sample Adjusted CRQL	Sample Adjusted MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Aluminum	7429-90-5	13500	49.9	19.9	mg/kg dr	D		
Beryllium	7440-41-7	1.22	4.99	0.997	mg/kg dr	JD	J	
Calcium	7440-70-2	3700	249	99.7	mg/kg dr	D		
Iron	7439-89-6	24900	249	99.7	mg/kg dr	D		
Magnesium	7439-95-4	3510	249	99.7	mg/kg dr	D		
Manganese	7439-96-5	8670	4.99	1.99	mg/kg dr	D		
Silica (SiO2)	763-18-69	7870	997	249	mg/kg dr	D		
Strontium	7440-24-6	34.5	9.97	1.99	mg/kg dr	D		
Zinc	7440-66-6	5260	19.9	9.97	mg/kg dr	D		

Lab Sample Name: C161105-18 **Sample No:** A8M5-2660 **Sample Date:** 9/27/2016 5:00:00 PM

Location M25 **Matrix Type:** Solid (dry wt basis)

Analyte	CAS No	Result Value	Sample Adjusted CRQL	Sample Adjusted MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Aluminum	7429-90-5	9470	50.3	20.1	mg/kg dr	D		
Beryllium	7440-41-7	<5.03	5.03	1.01	mg/kg dr	U	U	
Calcium	7440-70-2	4330	251	101	mg/kg dr	D		
Iron	7439-89-6	13200	251	101	mg/kg dr	D		
Magnesium	7439-95-4	3060	251	101	mg/kg dr	D		
Manganese	7439-96-5	773	5.03	2.01	mg/kg dr	D		
Silica (SiO2)	763-18-69	8230	1010	251	mg/kg dr	D		
Strontium	7440-24-6	29.5	10.1	2.01	mg/kg dr	D		
Zinc	7440-66-6	149	20.1	10.1	mg/kg dr	D		

Analysis Method ICPOE Tot. Rec. Metals

Lab Sample Name: C161105-19 **Sample No:** A8M5-2661 **Sample Date:** 9/28/2016 9:35:00 AM

Location M26B **Matrix Type:** Solid (dry wt basis)

Analyte	CAS No	Result Value	Sample Adjusted CRQL	Sample Adjusted MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Aluminum	7429-90-5	5880	50.0	20.0	mg/kg dr	D		
Beryllium	7440-41-7	<5.00	5.00	1.00	mg/kg dr	U	U	
Calcium	7440-70-2	4230	250	100	mg/kg dr	D		
Iron	7439-89-6	12100	250	100	mg/kg dr	D		
Magnesium	7439-95-4	4000	250	100	mg/kg dr	D		
Manganese	7439-96-5	1120	5.00	2.00	mg/kg dr	D		
Silica (SiO2)	763-18-69	5280	1000	250	mg/kg dr	D		
Strontium	7440-24-6	20.5	10.0	2.00	mg/kg dr	D		
Zinc	7440-66-6	294	20.0	10.0	mg/kg dr	D		

Lab Sample Name: C161105-20 **Sample No:** A8M5-2662 **Sample Date:** 9/27/2016 3:00:00 PM

Location M27 **Matrix Type:** Solid (dry wt basis)

Analyte	CAS No	Result Value	Sample Adjusted CRQL	Sample Adjusted MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Aluminum	7429-90-5	7340	49.5	19.8	mg/kg dr	D		
Beryllium	7440-41-7	<4.95	4.95	0.991	mg/kg dr	U	U	
Calcium	7440-70-2	1050	248	99.1	mg/kg dr	D		
Iron	7439-89-6	43000	248	99.1	mg/kg dr	D		
Magnesium	7439-95-4	2910	248	99.1	mg/kg dr	D		
Manganese	7439-96-5	856	4.95	1.98	mg/kg dr	D		
Silica (SiO2)	763-18-69	4610	991	248	mg/kg dr	D		
Strontium	7440-24-6	40.4	9.91	1.98	mg/kg dr	D		
Zinc	7440-66-6	310	19.8	9.91	mg/kg dr	D		

Lab Sample Name: C161105-21 **Sample No:** A8M5-2663 **Sample Date:** 9/28/2016 2:15:00 PM

Location PWMLP1 **Matrix Type:** Solid (dry wt basis)

Analyte	CAS No	Result Value	Sample Adjusted CRQL	Sample Adjusted MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Aluminum	7429-90-5	3110	49.1	19.6	mg/kg dr	D		
Beryllium	7440-41-7	<4.91	4.91	0.981	mg/kg dr	U	U	
Calcium	7440-70-2	8780	245	98.1	mg/kg dr	D		
Iron	7439-89-6	50400	245	98.1	mg/kg dr	D		
Magnesium	7439-95-4	2090	245	98.1	mg/kg dr	D		
Manganese	7439-96-5	5190	4.91	1.96	mg/kg dr	D		
Silica (SiO2)	763-18-69	3950	981	245	mg/kg dr	D		
Strontium	7440-24-6	21.0	9.81	1.96	mg/kg dr	D		
Zinc	7440-66-6	4380	19.6	9.81	mg/kg dr	D		

Analysis Method TM_Mercury 7473

Lab Sample Name: C161105-01 **Sample No:** A8M5-2643 **Sample Date:** 9/27/2016 10:00:00 AM

Location A34 **Matrix Type:** Soil

Analyte	CAS No	Result Value	Sample Adjusted CRQL	Sample Adjusted MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Mercury	7439-97-6	4.441	0.020	0.010	mg/kg dr		J	H, *III

Lab Sample Name: C161105-02 **Sample No:** A8M5-2644 **Sample Date:** 9/29/2016 8:30:00 AM

Location A41A **Matrix Type:** Soil

Analyte	CAS No	Result Value	Sample Adjusted CRQL	Sample Adjusted MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Mercury	7439-97-6	0.030	0.019	0.010	mg/kg dr	D	J	H, R

Lab Sample Name: C161105-03 **Sample No:** A8M5-2645 **Sample Date:** 9/27/2016 10:25:00 AM

Location A68 **Matrix Type:** Soil

Analyte	CAS No	Result Value	Sample Adjusted CRQL	Sample Adjusted MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Mercury	7439-97-6	0.064	0.019	0.010	mg/kg dr	D	J	H, R

Lab Sample Name: C161105-04 **Sample No:** A8M5-2646 **Sample Date:** 9/29/2016 2:15:00 PM

Location CC18B **Matrix Type:** Soil

Analyte	CAS No	Result Value	Sample Adjusted CRQL	Sample Adjusted MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Mercury	7439-97-6	0.085	0.019	0.010	mg/kg dr	D	J	H, R

Lab Sample Name: C161105-05 **Sample No:** A8M5-2647 **Sample Date:** 9/28/2016 5:10:00 PM

Location CC21D **Matrix Type:** Soil

Analyte	CAS No	Result Value	Sample Adjusted CRQL	Sample Adjusted MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Mercury	7439-97-6	0.047	0.019	0.010	mg/kg dr	D	J	H, R

Lab Sample Name: C161105-06 **Sample No:** A8M5-2648 **Sample Date:** 9/29/2016 12:00:00 PM

Location CC24C **Matrix Type:** Soil

Analyte	CAS No	Result Value	Sample Adjusted CRQL	Sample Adjusted MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Mercury	7439-97-6	0.087	0.020	0.010	mg/kg dr	D	J	H, R

Lab Sample Name: C161105-07 **Sample No:** A8M5-2649 **Sample Date:** 9/29/2016 9:15:00 AM

Location CC25 **Matrix Type:** Soil

Analyte	CAS No	Result Value	Sample Adjusted CRQL	Sample Adjusted MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Mercury	7439-97-6	0.120	0.020	0.010	mg/kg dr	D	J	H, R

Lab Sample Name: C161105-08 **Sample No:** A8M5-2650 **Sample Date:** 9/28/2016 4:20:00 PM

Location CC26 **Matrix Type:** Soil

Analyte	CAS No	Result Value	Sample Adjusted CRQL	Sample Adjusted MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Mercury	7439-97-6	0.164	0.020	0.010	mg/kg dr	D	J-	H

Analysis Method TM_Mercury 7473

Lab Sample Name: C161105-09 **Sample No:** A8M5-2651 **Sample Date:** 9/28/2016 8:48:00 AM

Location CC38 **Matrix Type:** Soil

Analyte	CAS No	Result Value	Sample Adjusted CRQL	Sample Adjusted MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Mercury	7439-97-6	0.077	0.020	0.010	mg/kg dr	D	J	H, R

Lab Sample Name: C161105-10 **Sample No:** A8M5-2652 **Sample Date:** 9/28/2016 10:40:00 AM

Location CC38D **Matrix Type:** Soil

Analyte	CAS No	Result Value	Sample Adjusted CRQL	Sample Adjusted MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Mercury	7439-97-6	0.096	0.020	0.010	mg/kg dr	D	J	H, R

Lab Sample Name: C161105-11 **Sample No:** A8M5-2653 **Sample Date:** 9/29/2016 4:00:00 PM

Location EG2 **Matrix Type:** Soil

Analyte	CAS No	Result Value	Sample Adjusted CRQL	Sample Adjusted MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Mercury	7439-97-6	0.061	0.019	0.010	mg/kg dr	D	J	H, R

Lab Sample Name: C161105-12 **Sample No:** A8M5-2654 **Sample Date:** 9/29/2016 3:30:00 PM

Location EG2A **Matrix Type:** Soil

Analyte	CAS No	Result Value	Sample Adjusted CRQL	Sample Adjusted MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Mercury	7439-97-6	0.044	0.019	0.010	mg/kg dr	D	J	H, R

Lab Sample Name: C161105-13 **Sample No:** A8M5-2655 **Sample Date:** 9/29/2016 1:00:00 PM

Location EG3A **Matrix Type:** Soil

Analyte	CAS No	Result Value	Sample Adjusted CRQL	Sample Adjusted MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Mercury	7439-97-6	0.129	0.020	0.010	mg/kg dr	D	J	H, R

Lab Sample Name: C161105-14 **Sample No:** A8M5-2656 **Sample Date:** 9/28/2016 4:15:00 PM

Location EG5 **Matrix Type:** Soil

Analyte	CAS No	Result Value	Sample Adjusted CRQL	Sample Adjusted MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Mercury	7439-97-6	0.087	0.020	0.010	mg/kg dr	D	J	H, R

Lab Sample Name: C161105-15 **Sample No:** A8M5-2657 **Sample Date:** 9/29/2016 4:35:00 PM

Location M12 **Matrix Type:** Soil

Analyte	CAS No	Result Value	Sample Adjusted CRQL	Sample Adjusted MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Mercury	7439-97-6	0.077	0.020	0.010	mg/kg dr	D	J	H, R

Lab Sample Name: C161105-16 **Sample No:** A8M5-2658 **Sample Date:** 9/28/2016 4:30:00 PM

Location M14 **Matrix Type:** Soil

Analyte	CAS No	Result Value	Sample Adjusted CRQL	Sample Adjusted MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Mercury	7439-97-6	0.017	0.020	0.010	mg/kg dr	JD	J	H, R

Analysis Method TM_Mercury 7473

Lab Sample Name: C161105-17 **Sample No:** A8M5-2659 **Sample Date:** 9/27/2016 5:30:00 PM

Location M24D **Matrix Type:** Soil

Analyte	CAS No	Result Value	Sample Adjusted CRQL	Sample Adjusted MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Mercury	7439-97-6	0.077	0.024	0.012	mg/kg dr	D	J	H, R

Lab Sample Name: C161105-18 **Sample No:** A8M5-2660 **Sample Date:** 9/27/2016 5:00:00 PM

Location M25 **Matrix Type:** Soil

Analyte	CAS No	Result Value	Sample Adjusted CRQL	Sample Adjusted MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Mercury	7439-97-6	0.044	0.028	0.014	mg/kg dr	D	J	H, R

Lab Sample Name: C161105-19 **Sample No:** A8M5-2661 **Sample Date:** 9/28/2016 9:35:00 AM

Location M26B **Matrix Type:** Soil

Analyte	CAS No	Result Value	Sample Adjusted CRQL	Sample Adjusted MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Mercury	7439-97-6	0.030	0.020	0.010	mg/kg dr	D	J	H, R

Lab Sample Name: C161105-20 **Sample No:** A8M5-2662 **Sample Date:** 9/27/2016 3:00:00 PM

Location M27 **Matrix Type:** Soil

Analyte	CAS No	Result Value	Sample Adjusted CRQL	Sample Adjusted MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Mercury	7439-97-6	0.094	0.019	0.010	mg/kg dr	D	J-	H

Lab Sample Name: C161105-21 **Sample No:** A8M5-2663 **Sample Date:** 9/28/2016 2:15:00 PM

Location PWMLP1 **Matrix Type:** Soil

Analyte	CAS No	Result Value	Sample Adjusted CRQL	Sample Adjusted MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Mercury	7439-97-6	0.508	0.020	0.010	mg/kg dr	D	J-	H